

COMMONWEALTH OF VIRGINIA
STATE WATER CONTROL BOARD

FACT SHEET

REISSUANCE OF A GENERAL VIRGINIA POLLUTANT DISCHARGE ELIMINATION
SYSTEM PERMIT TO DISCHARGE TO STATE WATERS AND STATE
CERTIFICATION UNDER THE STATE WATER CONTROL LAW

Reissuance Year: January 1, 2014

The State Water Control Board (Board) has under consideration the reissuance of a general Virginia Pollutant Discharge Elimination System (VPDES) permit for point source discharges resulting from the application of pesticides to surface waters. The issuance of this general permit is required by the Sixth Circuit Court January 9, 2009 decision to vacate EPA's 2006 NPDES Pesticides Rule in National Cotton Council of America v. EPA, 553 F.3d 927 (6th Cir., 2009). The court held that the Clean Water Act unambiguously includes "biological pesticides" and "chemical pesticides" with residuals within its definition of "pollutant." Therefore, pesticide applications need to be permitted under discharge elimination system programs in all state and federal permitting programs. This Virginia Pollutant Discharge Elimination System (VPDES) permit has taken into account the requirements of the EPA National Pollutant Discharge Elimination System permit for discharges from the application of pesticides effective October 31, 2011 (see http://cfpub.epa.gov/npdes/home.cfm?program_id=410).

Permit Number: VAG87

Name of Permittee: Any operator with point source discharges resulting from the application of pesticides to surface waters. Operator is defined as any person involved in the application of a pesticide that results in a discharge to state waters that meets either or both of the following two criteria: (1) The person has control over the financing for, or the decision to perform pesticide applications that result in discharges, including the ability to modify those decisions; or (2) The person has day-to-day control of or performs activities that are necessary to ensure compliance with the permit (e.g., they are authorized to direct workers to carry out activities required by the permit or perform such activities themselves).

Entities such as subcontractors or employees that are hired by an owner (e.g., of a pesticide application business) or other entity but are under the supervision of such owner or entity generally are not operators. Similarly, you are likely not an operator if, for example, you own the land, but the activities are being performed outside of your control (e.g., a public entity is spraying for mosquitoes over your property).

This permit is available to operators who discharge to surface waters from the application of: (1) biological pesticides; or (2) chemical pesticides that leave a residue (hereinafter collectively "pesticides"), when the pesticide application is for one of the following pesticide use patterns:

- Mosquito and other flying insect pest control
- Weed and algae pest control
- Animal pest control
- Forest canopy pest control
- Intrusive vegetation pest control.

Operator Location: Commonwealth of Virginia

Receiving Waters: Surface waters within the boundaries of the Commonwealth of Virginia, except those specifically named in Board Regulations which prohibit such discharges.

Restrictions:

The Department will deem an operator ineligible to discharge under this general permit if the operator is required to obtain an individual permit (9VAC25-31-170 B 3), if the operator is proposing to discharge to surface waters specifically named in Board regulations which prohibit such discharges, if the discharge would violate the Virginia Water Quality Standards antidegradation policy (9VAC25-260-30), or if the discharge is to surface waters that have been identified as impaired by that pesticide or its degradates. Impaired waters include both impaired waters with Board adopted, EPA approved or EPA imposed TMDLs (per 303(d) of the Clean Water Act), and impaired waters for which a TMDL has not yet been approved, established, or imposed for the discharge (those listed in the Virginia Water Quality Assessment 305(b)/303(d) Integrated Report as 'impaired' (includes all categories)).

The Board has made the determination that if the operator meets the conditions of this permit, they will comply with sections 9VAC25-26-30 A 1 and 2 (Tier 1 and 2) of the antidegradation policy in the Water Quality Standards Regulation. Section 9VAC25-260-30 A 3 provides for protection of exceptional waters (Tier 3) and does not allow new, additional, or increased discharge of waste to these waters. However, 9VAC25-260-30 A 3 b (3) allows for activities causing temporary sources of pollution in exceptional waters. The pesticides general permit regulation (9VAC25-800-30 D 2) recognizes applications of pesticides as temporary and allowable in exceptional waters. Currently, there no other Board regulations that prohibit these discharges. However, this general permit regulation prohibits coverage under this permit for operators that discharge to waters that are impaired for that pesticide or its degradates. A list of pesticide impaired waters in Virginia is in Attachment A.

The permit does not include terrestrial pesticide application or spray drift from terrestrial pesticide application, irrigation return flow and agricultural storm water. Terrestrial applications should not enter surface water because of restrictions provided under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), and therefore do not require coverage under this permit. The latter two agricultural related exclusions are specifically exempted from discharge permitting under the Clean Water Act.

On the basis of preliminary review and application of lawful standards and regulations, the Board proposes to issue the general permit subject to certain conditions and has prepared a draft permit. The Board has determined that this category of discharges is appropriately controlled under a general permit. The category of discharges to be included involves facilities with the same or similar types of operations and the facilities discharge the same or similar types of wastes. The draft general permit requires that all covered discharges meet technology and water quality based effluent limitations, special conditions and monitoring requirements, and that certain covered operators develop a pesticide discharge management plan (PDMP).

All pertinent information is on file and may be inspected, and arrangements made for copying by contacting Elleanore Daub at:

Virginia Department of Environmental Quality, P.O. Box 1105, Richmond, VA 23218
email: elleanore.daub@deq.virginia.gov Telephone (804) 698- 4111 FAX (804) 698-4032

Administrative

Activities Covered by this Permit

This permit is available to operators who discharge to surface waters from the application of: (1) biological pesticides; or (2) chemical pesticides that leave a residue (hereinafter collectively "pesticides"), when the pesticide application is for one of the following pesticide use patterns:

- Mosquito and other flying insect pest control - to control public health/nuisance and other flying insect pests that develop or are present during a portion of their life cycle in or above standing or flowing water. Public health/nuisance and other flying insect pests in this use category include but are not limited to mosquitoes and black flies. All mosquito pest control activity is considered to be to surface waters.
- Weed and algae pest control - to control weeds, algae and pathogens that are pests in surface waters. Nuisance weeds include, but are not limited to cattails, hydrilla and watermeal. (NOTE: If an operator is spraying a ditch with water in it to keep the ditch clear of weeds, the operator falls into this use pattern, regardless of how near the operator is to the ditch or what types of weeds are in the ditch. If the operator is spraying to clear the ditch itself and the ditch has water in it, the operator must meet the conditions of this permit.) Nuisance algae include, but are not limited to, blue green algae that can cause taste and odor problems in drinking water. Nuisance pathogens are disease-producing agents including, but not limited to, a virus, bacterium or other microorganism. The decision of whether a ditch 'counts' as surface water is usually made after its hydrological connection to a defined surface water is verified. However, for the purposes of this regulation, it is recommended to 'count' every ditch in acreage calculations and consider yourself 'covered' under this permit if you apply pesticides to ditches.
- Animal Pest Control - to control animal pests in surface waters. Animal pests in this use category include, but are not limited to, fish (e.g., snakehead) and zebra mussels.
- Forest Canopy Pest Control – application of a pesticide to the forest canopy to control the population of a pest species (e.g., insect or pathogen) where to target pests effectively a portion of the pesticide unavoidably will be applied over and deposited to surface water. Forest canopy pest control definitely includes aerial mature forest canopy pest control where streams and other small creeks cannot be seen. Juvenile aerial canopy spraying can normally be done in such a way as to avoid surface waters and do not need coverage under the permit or do not need to be included in acreage calculations. Spraying forest canopy from the ground (rather than aerially) may or may not reach surface waters and may not need coverage under this permit or be included in annual treatment area thresholds. The permittee must determine if this type of forest canopy pest control ground spraying will or will not reach surface waters.
- Intrusive vegetation pest control – control of vegetation along roads, ditches, canals, waterways and utility rights of way where to target the intrusive pests effectively, a portion of the pesticide unavoidably will be applied over and deposited to surface water. This includes utility facilities such as pump stations, plants and electric substations where the property is owned by the utility.

These use patterns were chosen because they represent pesticide discharges that may enter surface waters. Other use patterns where biological pesticides or chemical pesticides are applied (crops or other terrestrial applications) should not enter surface water when the operator correctly follows the product label and FIFRA requirements. If biological pesticides or chemical pesticide residue resulting from other use patterns enters state waters, then the operator is discharging to surface waters without a VPDES permit, and is subject to enforcement action under the State Water Control Law.

Other Pesticide Related Activities Not Covered

Hydrogen Peroxide

The Hydrogen peroxide (Hydrogen dioxide) (000595) Fact Sheet published by the EPA Office of Pesticide clearly states that if users follow label directions, no risks to the environment are expected from

use of pesticide products containing hydrogen peroxide because 1) the substance readily decomposes to water and oxygen gas, leaving no residue; 2) it is effective at low concentrations where no toxic effects are expected. However, if the product is a registered pesticide in Virginia, you need to consider yourself covered under this general permit under one of the five use categories. If the product is not a registered pesticide in Virginia, then application of the product does not need coverage, even if it falls under one of the five use categories.

Pond Dye

Most citizens use pond dyes to enhance the color of a water feature but it is also effective at controlling weed and algae growth due to blocking out sunlight needed for photosynthesis. If the pond dye product is a registered pesticide in Virginia (check <http://www.kellysolutions.com/VA/pesticideindex.htm> for a list of approved pesticides), the owner should consider himself covered under this general permit and abide to the permit requirements. If the pond dye product is not a registered pesticide in Virginia, then the use of the dye could place the owner in violation of the State Water Control law: <http://lis.virginia.gov/cgi-bin/legp604.exe?000+cod+62.1-44.5>. Specifically, paragraph three of the law addresses the alteration of “physical, chemical or biological properties” of state waters without a permit.

No requirement to Submit a Registration Statement (Notice of Intent)

9VAC25-31-170 B 2 e states that discharges other than discharges from publicly owned treatment works, combined sewer overflows, primary industrial facilities, and storm water discharges associated with industrial activity, may, at the discretion of the Board, be authorized to discharge under a general permit without submitting a notice of intent where the Board finds that a notice of intent requirement would be inappropriate. In making such a finding, the Board shall consider: the type of discharge; the expected nature of the discharge; the potential for toxic and conventional pollutants in the discharges; the expected volume of the discharges; other means of identifying discharges covered by the permit; and the estimated number of discharges to be covered by the permit. The Board shall provide in the public notice of the general permit the reasons for not requiring a notice of intent. The Department is exercising this option for pesticide operators after considering the items listed above, with input from the stakeholders on the technical advisory committee that was formed to assist the Department with the development of this permit.

The Department believes this is appropriate for several reasons. First, the registration statements would only provide very general information to the staff. Also, EPA is focusing their notice of intent submittals on large entities that apply pesticides to large areas (e.g., irrigation control districts, localities with mosquito control programs, etc.). The Virginia Department of Agriculture and Consumer Services (VDACS) maintains a database with persons or businesses operating in Virginia that sell, store, distribute, mix, apply or recommend for use, pesticides. These persons or businesses are required to obtain a valid pesticide business license in accordance with 2VAC20-40-20. These persons or businesses are also required to demonstrate knowledge of pesticide laws and regulations, potential hazards of pesticides to man and the environment and safe distribution, use, and disposal of pesticides. Furthermore, the VDACS also certifies commercial applicators, registered technicians and private applicators. Certified applicators must submit an application indicating contact information and use subcategory for which they wish to be certified (e.g., aquatic, forest canopy pest control, etc.). Commercial applicators must maintain records which contain the location, time, pest treated, pesticide and amount used. It is the Department’s view that this information constitutes the information from the largest category of operators that would be on any notices of intent submitted to the Department. Any submittal of paperwork to the Department would be a duplicative effort on the part of the applicant, and present an unnecessary use of staff resources. Not requiring registration statements also eliminates staff resources needed to review registrations, send out acceptance letters and other correspondence normally associated with registrations. Therefore, all operators falling under one or more of the five pesticide ‘uses’ are automatically covered for discharge to surface waters. Since there is no registration requirement, there is also no fee requirement. A list of pesticide business licensees representative of registrants (NOI submitters) can be found at: <http://www.vdacs.virginia.gov/pesticides/pdf/files/reports-businesses.pdf>.

Deadlines

This permit is effective January 1, 2014 and will remain effective for five years. Since there is no registration or notice of intent to apply, there are no deadlines for submittal.

The permit requires annual summary reports by February 10 of each year citing adverse incident events reported for the previous year (if any). If there are no adverse incidents, then there is no report due. No other reports or plans are required to be submitted to the DEQ. All permittees should read, understand and have a copy of the permit. Permittees that exceed the annual treatment area thresholds in part 9VAC25-800-30 C must maintain a pesticide discharge management plan (PDMP). The requirements for the PDMP are in part 9VAC25-800-60 C. The permit, this fact sheet and a PDMP template are available online at

<http://www.deq.virginia.gov/Programs/Water/PermittingCompliance/PollutionDischargeElimination/PermitsFees.aspx#pest>

Complying with other statutes regulations and requirements

Having coverage under this permit does not relieve operators of their responsibility to meet other applicable federal, state or local statutes, ordinances or regulations, including the pesticide product label.

Terminations

There are no additional termination procedures when an operator decides to stop discharges resulting from the application of pesticides to surface waters.

Endangered and Threatened Species

Recommendations from other natural resource agencies on endangered and threatened species protection for this general permit was done via their participation on the technical advisory committee. The general permit requires operators to document and report adverse impacts to threatened and endangered species (see Part I D 2 below).

Operators with concerns about threatened and endangered species or critical habitat for a specific location can consult http://www.fws.gov/northeast/virginiafield/endspecies/Critical_Habitat.html for the federally designated critical habitat in Virginia. For location information on all state and federal threatened and endangered species or species of concern, the wildlife information mapper can take you to any location in Virginia, and if you click on 'report' it will list all species within a designated search radius (e.g., 2 or 3 miles) <http://vafwis.org/fwis/?Title=VaFWIS+Geographic+Search&vUT>. It will list the threatened and endangered species first.

A full listing of all aquatic and terrestrial species (except insects and plants) can be found at <http://www.dgif.virginia.gov/wildlife/virginiatescspecies.pdf>, and can be found in Attachment B.

Listing of state threatened or endangered plants and insects can be found in § 3.2-1000-1011 of the Code of Virginia and 2VAC5-320-10 of the Virginia Administrative Code, and is in Attachment B.

For a more detailed interaction with U.S. Fish and Wildlife Service's on federally listed species found, the operator may have a project reviewed by following the instruction on the project review website http://www.fws.gov/northeast/virginiafield/endspecies/Project_Reviews.html.

Part I Effluent Limitations and Monitoring Requirements:

The general permit requires that all covered discharges meet technology and water quality based effluent limitations (Part I A). Violation of any of these effluent limitations constitutes a violation of the permit.

Part I A 1 Technology-based limits - Minimize

Rationale: Technology-based limits are required per 9VAC25-31-220 A of the VPDES Permit Regulation. Technology-based limits in this permit are not numerical, rather narrative best management practices which minimize discharges of pesticides to surface waters. These narrative technology limits are based on EPA's NPDES Pesticide General Permit for Discharges from the Application of Pesticides

(2011), in compliance with the provisions of the Clean Water Act (CWA), as amended (33 *United States Code* [U.S.C.] 1251 *et seq.*).

Part I A 1 a - Technology-based limits – Operator/Applicator

Operators who perform the application of pesticides or who have day to day control of applications (operator / applicator) are responsible for meeting the first part of the technology-based limits (i.e., to 'minimize pesticide discharges to surface waters'). This is met by following the label (use the lowest effective amount), maintaining application equipment, use equipment with cut-off valves and devices to avoid spills to surface waters, and assess weather conditions to ensure the application is consistent with product label requirements. See detail below (Technology-Based Limits Operator/Applicator).

Part I A 1 b - Technology-based limits – Operator/Decision Maker

The second part of the technology-based limits to 'minimize pesticide discharges to surface waters' is the practice and consideration of integrated pest management (IPM). Operators with control over the financing for, or the decision to perform pesticide applications (operator / decision maker) that result in discharges to surface water shall consider IPM to ensure that discharges resulting for the pesticide application to surface waters are minimized. See detail below (Technology-Based Limits Operator/Decision Maker). In addition, operators (either applicators or decision makers) who exceed the annual treatment area thresholds (those that have to do a PDMP) must document integrated pest management in the PDMP. IPM measures include identifying the target pest, densities and sources or factors contributing to the problem and making determinations about pest management options to manage that problem. Pest management options include no action, prevention, physical methods, cultural methods, biological control or pesticides. If pesticides are chosen, then conduct surveillance to assess the pest management area, determine action thresholds for its use, make sure environmental conditions are correct for application, evaluate site restrictions, application timing and application methods and evaluate using the pesticide against the most susceptible developmental stage of the pest. All these pest management measures to meet these limitations should be done to the extent technologically available and economically achievable.

Technology-Based Limits Operator/Applicator

Part I A 1 a (1) Use the lowest effective amount of pesticide product per application and optimum frequency of pesticide applications necessary to control the target pest, consistent with reducing the potential for development of pest resistance without exceeding the maximum allowable rate of the product label.

It is illegal to use a pesticide in any way prohibited by the FIFRA labeling. Also, use of pesticides must be consistent with any other applicable state or federal laws. To minimize the total amount of pesticide discharged, operators must consider lower application rates, frequencies, or both to accomplish effective control keeping in mind pesticide resistance. Using the lowest possible effective rate ensures maximum efficiency in pest control with the minimum quantity of pesticide. Using the lowest possible effective rate does not necessarily mean choosing the lowest rate on the label. Sometimes using a higher rate (without exceeding the maximum allowable rate of the product label) is more effective and more protective for the environment. The lowest effective application rate also reduces the amount of pesticide available that is not performing a specific pest-control function. Using the lowest possible effective rate and frequency of application can result in cost and time savings to the user. To minimize discharges of pesticide, operators should base the rate and frequency of application on what is known to be effective against the target pest. Using the lowest effective amount (and not exceeding the product label will assist with resistance management. See National Pesticide Applicator Certification Core Manual, Chapter 1 – Pest Management for additional information on pesticide resistance.

Part I A 1 a (2) No person shall apply, dispense, or use any pesticide in or through any equipment or application apparatus unless the equipment or apparatus is in sound mechanical condition and capable of satisfactory operation. All pesticide application equipment shall be properly equipped to dispense the proper amount of material. All pesticide mixing, storage, or holding tanks, whether on application equipment or not, shall be leak proof. All spray distribution systems shall be leak proof, and any pumps

which these systems may have shall be capable of operating at sufficient pressure to assure a uniform and adequate rate of pesticide application.

This requirement is taken from 2VAC20-20-170 A, Rules and Regulations for Enforcement of the Virginia Pesticide Law –Application and Equipment.

Common-sense and good housekeeping practices enable pesticide users to save time and money and reduce potential for unintended discharges of pesticides to surface waters. Regular maintenance activities should be practiced and improper pesticide mixing and equipment loading should be avoided. When preparing the pesticides for application be certain that you are mixing them correctly and preparing only the amount of material that you need. Carefully choose the pesticide mixing and loading area and avoid places where a spill will discharge into surface waters. Some basic factors operators should consider are:

- Inspect pesticide containers at purchase to ensure proper containment;
- Maintain clean storage facilities for pesticides;
- Regularly monitor containers for leaks;
- Rotate pesticide supplies to prevent leaks that may result from long term storage; and
- Promptly deal with spills following manufacturer recommendations.

Part I A 1 a (3) All pesticide application equipment shall be equipped with cut-off valves and discharge orifices to enable the operator to pass over non-target areas without contaminating them. All hoses, pumps, or other equipment used to fill pesticide handling, storage, or application equipment shall be fitted with an effective valve or device to prevent backflow into water supply systems, streams, lakes, other sources of water, or other materials. However, these backflow devices or valves are not required for separate water storage tanks used to fill pesticide application equipment by gravity systems when the fill spout, tube, or pipe is not allowed to contact or fall below the water level of the application equipment being filled, and no other possible means of establishing back siphon or backflow exists.

This requirement is taken from 2VAC20-20-170 B, Rules and Regulations for Enforcement of the Virginia Pesticide Law –Application and Equipment.

To minimize discharges of pesticide, operators must ensure that the rate of application is calibrated (i.e., nozzle choice, droplet size, etc.) to deliver the appropriate quantity of pesticide needed to achieve greatest efficacy against the target pest. Improperly calibrated pesticide equipment may cause either too little or too much pesticide to be applied. This lack of precision can result in excess pesticide being available or result in ineffective pest control. When done properly, equipment calibration can assure uniform application to the desired target and result in higher efficiency in terms of pest control and cost. It is important for applicators to know that pesticide application efficiency and precision can be adversely affected by a variety of mechanical problems that can be addressed through regular calibration. Sound calibration practices to consider are:

- Choosing the right spray equipment for the application;
- Ensuring proper regulation of pressure and choice of nozzle to ensure desired application rate;
- Calibrating spray equipment prior to use to ensure the rate applied is that required for effective control of the target pest;
- Cleaning all equipment after each use and/or prior to using another pesticide unless a tank mix is the desired objective and cross contamination is not an issue;
- Checking all equipment regularly (e.g., sprayers, hoses, nozzles, etc.) for signs of uneven wear (e.g., metal fatigue/shavings, cracked hoses, etc.) to prevent equipment failure that may result in inadvertent discharge into the environment;
- Replacing all worn components of pesticide application equipment prior to application.

Part I A 1 a (4) Assess weather conditions (e.g., temperature, precipitation and wind speed) in the treatment area to ensure application is consistent with product label requirements.

Weather conditions may affect the results of pesticide application. Applicators must assess the treatment area to determine whether weather conditions support pest populations and are suitable for pesticide application.

Part I A 1 b Technology Based Limits, Operator/Decision Maker

The second part of the technology-based effluent limitations in Part I A 1 b are based on integrated pest management (IPM) practices. IPM, as defined in FIFRA, is a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks (FIFRA, 7 U.S.C. 136r-1). IPM is not a single pest control method but, rather, a series of pest management evaluations, decisions and controls. Operators whose discharges of pesticides to surface waters are solely from pesticide research and development activities do not have to comply with these additional technology-based effluent limitations to the extent the limits may compromise the research design.

Part I A 1 b of this permit requires all operators to identify the pest problem; to evaluate and implement efficiently and effectively pest management; and to properly use pesticides. Operators are required to perform each of these permit conditions prior to the first pesticide application covered under this permit and at least once each calendar year thereafter. Below is a general discussion describing the limitations for all use patterns. Requirements for documentation of the specific measures implemented are contained in Part I C (Pesticide Discharge Management Plan).

Operators required to perform IPM practices will be required to do the following regardless of use pattern:

Identify the Problem

Operators are required to identify the pest problem, identify the target pest, and establish an action threshold. Understanding the pest biology and ecology will provide insight into selecting the most effective and efficient pest management strategies (pesticidal or non-pesticidal methods), and in developing an action threshold. An action threshold is a point at which pest populations or environmental conditions indicate that pest control action must be taken. Action thresholds help determine both the need for control actions and the proper timing of such actions. It is a predetermined pest level that is deemed to be unacceptable. In some situations, the action threshold for a pest may be zero (i.e., no presence of the pest is tolerated). This is especially true when the pest is capable of transmitting a human pathogen (e.g., mosquitoes and the West Nile virus). In areas where aquatic weeds are problematic, it may be preferable to use an aquatic herbicide as a preventive measure rather than after weeds become established. In some situations, even a slight amount of pest damage may be unacceptable for ecological or aesthetic reasons. Sometime pre-emergent pesticide application is needed, as preventive measure to keep aquatic weeds at bay. Action thresholds can vary by pest, by site, and by season. Often the action threshold is expressed as the number of pests per unit area. Action thresholds may be difficult to establish. In a new IPM program, a practical approach is to establish an action threshold for the major pests. As operators gain insight and experience into specific pest management settings, the action levels can be revised up or down.

To identify the problem at a treatment area, operators may use existing data to meet the conditions of the permit. For example, a mosquito district may use surveillance data from an adjacent district to identify mosquito species at their pest management area. Operators may also use relevant historic site data.

Pest Management Options

Operators are required to implement efficient and effective means of pest management that most successfully minimizes discharges to surface waters resulting from the application of pesticides. Operators must evaluate both pesticide and non-pesticide methods. Operators must consider and evaluate the following options or combination of options: no action, prevention, mechanical/physical methods, cultural methods, biological control agents, and pesticides. In the evaluation of these options, operators must consider impacts to water quality, impacts to non-target organisms, pest resistance, feasibility, and cost effectiveness. Combinations of various management methods are frequently the most effective pest management strategies over the long

term. The goal should be to emphasize long-term control rather than a temporary fix. Examples of options to pesticide use include:

- Eliminating breeding sites (for insects)
- Reduce nutrients to ponds to control weed and algae growth
- Removing animal pests (e.g. fishing, netting) or preventing their spread (e.g. educating the public)
- Planting trees resistant to parasites
- Mowing or physical removal of intrusive plants.

A list of references for IPM practices are included as Attachment D.

Pesticide Use

Operators are required to conduct pest surveillance and reduce the impact on the environment. Pest surveillance is important to properly time the need for pest control. To reduce the impact on the environment and non-target organisms, operators are required to apply pesticide when the action threshold has been met. As noted earlier, action thresholds help determine both the need for control actions and the proper timing of such actions. There are additional requirements designed for each use pattern in Sections Part I A 1 b (1), (2), (3), (4) and (5) of the permit. For additional information and other limits on pesticide use, see specific IPM discussion under each use pattern.

Concerns for pesticide use during mosquito control as it relates to bee population health were raised during public comment in 2013 because bees can be susceptible to mosquito pesticides. Information about IPM practices to protect bee health population during mosquito control activities are included in Attachment D.

Part I A 2 Water quality-based limitations

Rationale: The Permit Regulation at 9VAC25-31-220 D requires VPDES permits to meet water quality standards. We do this by including water quality-based effluent limits (WQBELs). Unlike individual permits that include requirements tailored to site-specific considerations, general permits, while tailored to specific industrial processes or types of discharges (e.g., from the application of pesticides), often do not contain site-specific WQBELs. Instead, in general, a narrative statement is included that addresses WQBELs. These narrative technology limits are based on EPA's NPDES Pesticide General Permit for Discharges from the Application of Pesticides (2011), in compliance with the provisions of the Clean Water Act (CWA), as amended (33 *United States Code* [U.S.C.] 1251 *et seq.*).

In this permit the WQBEL is as follows:

The operator's discharge of pollutants must be controlled as necessary to meet applicable numeric and narrative state, territory, or tribal water quality standards for any discharges authorized under this permit, with compliance required upon beginning such discharge.

If at any time you become aware, or the Board determines, that the operator's discharge of pollutants causes or contributes to an excursion of applicable water quality standards, you must take corrective action as required in Part I D 1 of this permit.

Any discharge that results in an excursion of any applicable numeric or narrative water quality standard is prohibited. The Department expects that compliance with the FIFRA label requirements, the technology-based effluent limitations, and other terms and conditions in this permit will meet applicable WQBELs. If an operator becomes aware that an excursion of water quality standards has occurred, corrective actions must be taken and documented per Part I D 1 of the permit. If a water quality standards excursion has also caused an adverse incident, the adverse incident must be documented and reported per Part I D 2. If the water quality standards excursion occurred because of a spill, leak or other unauthorized discharge, notification in excess of a reportable quantity in 40 CFR Parts 110, 117 or 302, it must be reported per Part I D 3 of this permit. A link to the 40 CFRs (Code of Federal Regulations) can be found here:

http://www.access.gpo.gov/nara/cfr/waisidx_07/40cfrv21_07.html

Part I B Monitoring

Rationale: Monitoring is required in any VPDES permit to demonstrate compliance with the permit conditions per 9VAC25-31-220 I. However, monitoring of pesticide discharges poses several challenges not generally encountered in "traditional" VPDES permitting situations. For example, there is no "wastewater discharge" per se from pesticide applications that is analogous to end-of-pipe discharges. A manufacturing plant would, for example, typically direct its wastewater through a treatment system to remove pollutants, and then would direct the effluent through a pipe into a receiving waterbody. However, for chemical pesticide applications, at the time of application the pesticide contains both the portion serving its intended purpose as well as the potential residual for which monitoring data would be appropriate. Thus, monitoring the "outfall" in this case would merely provide data on the amount of the product as applied (information already known through the FIFRA registration process) and would not be useful for comparing with any type of effluent limitation or water quality standard.

Ambient water quality monitoring was also considered for this permit and determined that it was infeasible/impracticable for the following reasons:

- **Uncertainty:** Ambient water quality monitoring would generally not be able to distinguish whether the results were from the pesticide application for which monitoring is being performed, or some other upstream source.
- **Lack of applicable measurable standards:** Pesticide-specific water quality standards do not exist at this time for the vast majority of constituents in the products authorized for use under this PGP.
- **Safety and Accessibility:** Pesticides, particularly those used for mosquito control and forest canopy pest control, are often applied over waterbodies in remote areas, hazardous terrain, and swamps that are either inaccessible or pose safety risks for the collection of samples.
- **Difficulty of residue sampling for chemical pesticides:** For chemical pesticides, the "pollutant" regulated by the PGP is the residue that remains after the pesticide has completed its activity, and it is this residue that would be the subject of any water quality monitoring requirement. However, the point at which only "residue" remains is not practically discernable at this time for a pesticide application.
- **Usefulness of data:** Some states have questioned the value of ambient water quality monitoring data obtained from state permitting programs. The data generally showed that water quality impacts were not occurring, and one state even discontinued the requirement in revisions of its state permit.

Given the questionable ability of ambient water quality data to demonstrate permit compliance, EPA (per the NPDES Pesticide General Permit for Discharges from the Application of Pesticides (2011), in compliance with the provisions of the Clean Water Act (CWA), as amended (33 *United States Code* [U.S.C.] 1251 *et seq.*) has determined that there are suitable alternative monitoring activities to determine permit compliance, other than ambient water quality monitoring, for this permit.

Monitoring requirements for all operators (applicators and decision makers) include visual assessment in the area where pesticides are applied to look for adverse incidents caused by application of pesticides. The visual monitoring requires spot checks in the area to and around where pesticides are applied and must be done during any post-application surveillance or efficacy check, if the operator does one, and during a pesticide application. Visual monitoring is not required when it is infeasible or unsafe to do so (e.g., when the pesticide application is performed in darkness, applications made from aircraft and applications made from a moving vehicle (road vehicle, watercraft, etc.) when the applicator is the driver). A visual monitoring assessment must also be conducted during any post-application surveillance to determine the efficacy of the pesticide treatment. Visual monitoring of this type is only required if the operator performs post application surveillance in the normal course of business. The Department expects that visual assessments may reasonably be conducted during applications and efficacy inspections may be conducted on foot or from a stationary vehicle.

The visual monitoring is not required to be submitted to DEQ. The permit does not require the operator to keep a record of the visual monitoring assessments.

Part I C Pesticide Discharge Management Plan

Rationale: Any operator exceeding certain annual area thresholds must maintain a pesticide discharge monitoring plan (PDMP) in order to document how the operator will implement the effluent limitations. There is no regulatory requirement in the VPDES Permit Regulation for a PDMP; however, it is standard practice when best management practices are used to meet effluent limits to prepare some type of operations manual or a pollution prevention plan to document the management practices and adjustments to the program. EPA has included the PDMP concept in their pesticide general permit and the VA PDMP mirrors the EPA plan. This requirement is based on EPA's NPDES Pesticide General Permit for Discharges from the Application of Pesticides (2011), in compliance with the provisions of the Clean Water Act (CWA), as amended (33 *United States Code* [U.S.C.] 1251 *et seq.*).

A PDMP is a "living" document that requires periodic reviews and must be kept up-to-date. Where pest management measures are modified or replaced to meet effluent limitations, such as in response to a Part I A 2 water quality standards violation triggering a Part I D 1 corrective action, such changes must be documented in the PDMP. The PDMP is not a limitation and does not itself impose requirements on discharges. These are already imposed by the limitations in parts I A 1 and 2. The PDMP is rather a tool for operators to document, among other things, how pest management measures will be implemented to comply with the permit's effluent limitations, and is a permit "term or condition." Failure to have a PDMP, where required, is a violation of the permit.¹ A PDMP worksheet is provided in Appendix C to assist the operator to develop the first draft. The PDMP can be expanded and improved over time.

The PDMP must be developed prior to the first application for those operators who know prior to commencement of discharge that they will exceed an annual treatment threshold, prior to exceeding an annual threshold for operators who do not know until after commencement of discharge that they will exceed an annual treatment threshold for that year, and no later than 90 days after responding to a declared pest emergency situation for operator commencing discharge in response to a declared pest emergency situation.

The PDMP is not required to be submitted to the Department, but must be made available to the public when requested per the Freedom of Information Act (FOIA) (Chapter 37 of Title 2.2) - see *Part I C 7 PDMP Modifications and Availability* section below.

If you exceed the following annual thresholds you must develop a PDMP:

Annual Treatment Area Thresholds
9VAC25-800-30 C (Table 1)

Pesticide Use	Annual Threshold
Mosquitoes and Other Flying Insect Pest Control	6400 acres of treatment area ³
Weed and Algae Pest Control:	80 acres of treatment area ¹ or 20 linear miles of treatment area ²
Animal Pest Control:	80 acres of treatment area ¹ or 20 linear miles of treatment area ²
Forest Canopy Pest Control	6400 acres of treatment area ³
Intrusive Vegetation Pest Control	6400 acres of treatment area ³ or 20 linear miles of treatment area ²

¹ This permit is also consistent with the decision in Texas Independent Producers and Royalty Owners Assoc., et. al. v. EPA, 410 F.3d 964 (7th Cir. 2005), where petitioners challenged EPA's issuance of the construction general permit (CGP) that covers stormwater discharges. In that case, the Court found that neither the Stormwater Pollution Prevention Plan (SWPPP) nor the Notices of Intent (NOIs) are permits or permit applications because they do not amount to limits. 410 F.3d at 978. Further, the Court found that the permit requirement to develop a SWPPP is not an effluent limitation. For the PGP, the PDMP serves a similar purpose as the CGP SWPPP.

¹ - Calculations include the area of the applications made to: (1) surface waters and (2) conveyances with a hydrologic surface connection to surface waters at the time of pesticide application. For calculating annual treatment area totals, count each pesticide application activity as a separate activity. For example, applying pesticides twice a year to a ten acre site is counted as twenty acres of treatment area. For lake acreages, the operator may include the entire lake acreage OR only the areas intended to provide pesticidal benefit.

² - Calculations include the extent of the application made to linear features (e.g., roads, ditches, canals, waterways and utility rights of way) or along the water's edge adjacent to: (1) surface waters and (2) conveyances with a hydrologic surface connection to surface waters at the time of pesticide application. For calculating annual treatment totals, count each pesticide application activity or area as a separate activity. For example, applying pesticides twice a year to a 1 mile linear feature (e.g., ditch) equals 2 miles of treatment area regardless of whether one or both sides of the ditch are treated. Applying pesticides twice a year along 1 mile of lake shoreline equals 2 miles of treatment area.

³ - The total acreage may include water and land for ease of calculation.

These calculations include farm ponds, ditches (including road side and irrigation ditches) and storm water best management practices with a hydrologic connection to surface water. Sediment ponds during construction and retention ponds with no spill way are not surface waters and are not included in calculations. Typically a storm water pond will start out for erosion and sediment control but then will be a water feature and the storm water pond is maintained but it is no longer a treatment unit. If unsure, assume any water body has a hydrologic connection and must be counted. If a ditch is dry or expected to be dry during the application period, it does not need to be counted. Wetlands can be dry or wet, and both must be counted. If unsure about wetlands locations, include the entire spray area, even if it includes land. Wetlands information and acreages can be found at <http://www.fws.gov/wetlands/data/Mapper.html>. At the web site, zoom to the application area and use the information tool to see the wetlands acreages.

The rationale for the annual treatment area threshold for each use pattern is as follows:

For mosquitoes and other flying insect pests, the annual treatment area threshold has been set at 6400 acres. The Department believes that the vast majority of mosquito control and abatement districts in Virginia manages areas significantly larger than this threshold and may reasonably expect to exceed it during any given year.

For weeds and algae pest control, the annual treatment area threshold has been set at 80 acres or 20 linear miles of treatment on canals and irrigation system conveyances. This threshold has been set to capture operators treating relatively large portions of surface waters and watersheds, such as water management districts, wildlife and game departments, and some homeowner and lake associations.

Animal pest control is most commonly treated by public agencies such as departments of fish and game or utilities such as water management districts that manage areas of surface water in excess of 80 acres. The high mobility and prolific breeding ability that necessitate control of aquatic animals usually means that their treatment most often occurs in the entirety or large portions of the water bodies they inhabit.

Forest canopy pest suppression programs are designed to be applied to large tracts of terrain, throughout which operators may not be able to see or avoid surface waters beneath the canopy. The annual treatment area threshold at 6400 acres for this use pattern will exclude only the smallest applications from the PDMP requirement. These smaller applications generally occur on private lands. Therefore, the Department believes the threshold appropriately captures most operators engaging in this use pattern, particularly public agencies managing large tracts of land.

Intrusive vegetation pest control is designed to be applied to linear features or large tracts of land to maintain public utility structures, roads, rights of way etc... Most structures and rights of way should use the more stringent measurement (that which results in a PDMP) which is normally >20 linear miles. It is reasonable to apply the same acreages and linear mileage for this category as in the other large management areas (mosquito and forest canopy pest control) for consistency.

The PDMP must include the following elements:

Part I C 2 Pesticide discharge management team

The permit requires that a qualified individual or team of individuals be identified to manage pesticide discharges covered under the permit. Identification of a pesticide discharge management team ensures that appropriate persons (or positions) are identified as necessary for developing and implementing the plan. Inclusion of the team in the plan provides notice to staff and management (i.e., those responsible for signing and certifying the plan) of the responsibilities of certain key staff for following through on compliance with the permit's conditions and limits.

The pesticide discharge management team is responsible for developing and revising the PDMP, implementing and maintaining the pest management measures to meet effluent limitations, and taking corrective action where necessary. Team members should be chosen for their expertise in the relevant areas to ensure that all aspects of pest management are considered in developing the plan. The PDMP must clearly describe the responsibilities of each team member to ensure that each aspect of the PDMP is addressed. The Department expects most operators will have more than one individual on the team, except for small entities with relatively simple plans and/or staff limitations. The permit requires that team members have ready access to any applicable portions of the PDMP and the permit.

Part I C 3 Pest Problem Description

The permit requires that the PDMP include a description of the pest problem at the pest management area. A detailed pest management area description assists operators in subsequent efforts to identify and set priorities for the evaluation and selection of pest management measures taken to meet effluent limitations set forth in Parts I A 1 and 2 and in identifying necessary changes in pest management. The description must include identification of the target pest(s), source of the pest problem, and source of data used to identify the problem. Historic data or other available data (e.g., from another similar site) may be used to identify the problem at your site. If you use other site data, you must document in this section why data from your site is not available or not taken within the past year and explain why the data is relevant to your site. Additionally, the pest management area descriptions should include any sensitive resources in the area, such as unique habitat areas, rare or listed species, or other species of concern that may limit pest management options.

Action Threshold(s)

The permit requires that the PDMP include a description of the action threshold(s) established for the target pest, including a description of how they were determined and method(s) to determine when the action threshold(s) has been met. An action threshold is a level of pest prevalence at which an operator takes action to reduce the pest population. For some pests, action may be needed before pests or pest damage appears. In those cases, an action threshold may be defined as a set of conditions, e.g., a plant is at a susceptible stage for a disease under the right weather conditions.

General Location Map

The PDMP must also contain a general location map of the site that identifies the geographic boundaries of the area to which the plan applies and location of surface waters (this could be from a state wide or county wide approach or individual water bodies, depending on the extent of applications for that operator). To improve readability of the map, some detailed information may be kept as an attachment to the site map and pictures may be included as deemed appropriate.

Part I C 4 Integrated pest management options evaluation.

The permit requires the PDMP to document how pest management options or a combination of pest management options are evaluated. Pest management options include no action, prevention, mechanical/physical methods, cultural methods, biological control agents, and pesticides.

All six pest management tools may not be available for a specific use category and/or treatment area. However, the PDMP must include documentation of how the six pest management tools were evaluated prior to selecting a site specific pest management strategy. For the no action option, operators should document the impact of this option without any current pest management strategy at the site. For the prevention option, the operator should document the methods implemented to prevent new introductions or the spread of the pests to new sites such as identifying routes of invasion and how these can be intercepted to reduce the chance of invasion. Prevention may include source reduction, using pathogen-free or weed-free seeds or fill; exclusion methods (e.g., barriers) and/or sanitation methods, like wash stations, to prevent reintroduction by vehicles, personnel, etc. Some prevention management methods may fall under mechanical/physical or cultural methods as well.

For the pesticide management option, operators must include a list of the active ingredient(s) evaluated. Discussion should also identify specific equipment or methods that will prevent or reduce the risks to non-target organisms and pesticide discharges to surface waters.

Part I C 5 Response Procedures

Spill Response Procedures

The PDMP must document procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other release to surface waters. In addition, the PDMP must include documentation of the procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies.

Adverse Incident Response Procedures

In the PDMP, operators must document appropriate procedures for responding to an adverse incident resulting from pesticide applications. Operator must identify and document the following:

- Course of action or responses to any incident resulting from pesticide applications;
- Chain of command notification for the incident, both internal to your agency/organization and external;
- State/Federal contacts with phone numbers;
- Name, location, and telephone of nearest emergency medical facility;
- Name, location, and telephone of nearest hazardous chemical responder; including police/fire.

Part I C 6 Signature Requirements

The PDMP must be signed and certified in accordance with the signatory requirements in Part II G of the permit. This requirement is consistent with standard VPDES permit conditions described in 9VAC25-31-110 and is intended to ensure that the operator understands his/her responsibility to create and maintain a complete and accurate PDMP. The signature requirement includes an acknowledgment that there are significant penalties for submitting false information.

Part I C 7 PDMP Modifications and Availability

While not required to be submitted to the Department, interested persons can request a copy of the PDMP through the Department, at which point the Department will likely request the operator to provide a copy of the PDMP. By requiring members of the public to request a copy of the PDMP through the Department, the Department is able to provide the operators with assurance that any Confidential Business Information that may be contained within its PDMP is not released to the public. The Water Control Law states that any information, **except effluent data**, as to secret formulae, processes, or secret methods shall be kept confidential (§ 62.1-44.21). It is the responsibility of the source providing confidential information, not that of DEQ, to identify the information as confidential and seek DEQ's acquiescence in that designation. DEQ is responsible for keeping such designation confidential. It is the Department's expectation that operators can write the PDMP appropriately without including confidential business information.

The operator shall review the PDMP at a minimum once per calendar year and whenever necessary to update the pest problem identified and pest management strategies evaluated for the pest management area.

A PDMP template is available on the DEQ website at

<http://www.deq.virginia.gov/Programs/Water/PermittingCompliance/PollutionDischargeElimination/PermitsFees.aspx#pest>

Part I D Special Conditions

Special conditions are included in all VPDES permits per 9VAC25-31-210 (establishing permit conditions). This states that the Board shall establish conditions, as required on a case-by-case basis, to provide for and assure compliance with all applicable requirements of the law, the CWA and regulations. These shall include conditions under 9VAC25-31-240 (duration of permits), 9VAC25-31-250 (schedules of compliance) and 9VAC25-31-220 (monitoring). With some exceptions, the special conditions in this permit mirror sections 6 and 7 of the EPA NPDES Pesticide General Permit for Discharges from the Application of Pesticides (2011), in compliance with the provisions of the Clean Water Act (CWA), as amended (33 *United States Code* [U.S.C.] 1251 *et seq.*).

Part I D 1 Corrective Action

Corrective actions in this permit are follow-up actions an operator must take to assess and correct problems. They require review and revision of pest management measures and pesticide application activities, as necessary, to ensure that these problems are eliminated and will not be repeated in the future. Changes to pest management measures to eliminate unauthorized releases, meet effluent limits, minimize discharges or correct adverse incidents must be made before the next pesticide application, or if not practical, as soon as possible.

It should be noted that a situation triggering corrective action is not necessarily a permit violation and, as such, may not necessarily trigger a modification of pest management measures to meet effluent limitations. However, failure to conduct corrective action reviews in such cases does constitute a permit violation.

Part I D 2 Adverse Incident documentation and Reporting

Operators are required to take specific actions in response to identified adverse incidents which may have resulted from a discharge from the pesticide application. Namely, operators are required to provide oral notice to the Department within 24 hours and then follow-up with a written report within 5 days of becoming aware of the adverse incident. "Adverse incident" is defined in section 9VAC25-800-10 of the permit regulation, but generally an adverse incident is defined as any effect of a pesticide's use that is unexpected or unintended. Adverse incidents must be reported even when the product label states that adverse effects may occur.

The 24-hour oral notification must include at least the following information:

- The caller's name and telephone number;
- Operator name and mailing address;
- The name and telephone number of a contact person, if different than the person providing the 24-hour notice;
- How and when the permittee became aware of the adverse incident;
- Description of the location of the adverse incident;
- Description of the adverse incident identified and the EPA pesticide registration number for each product that was applied in the area of the adverse incident; and
- Description of any steps the permittee has taken or will take to correct, repair, remedy, cleanup, or otherwise address any adverse effects.

If notification cannot be done in 24-hours, notification shall be as soon as possible, and a reason for why the notification was not possible within 24 hours must be provided.

The operator is still required to do FIFRA section 6(a)(2) (40 CFR Part 159) notification and reporting also.

The operator does not need to report adverse incidents under the following conditions:

- The operator is aware of facts that clearly establish that the adverse incident was not related to toxic effects or exposure from the pesticide application.
- The operator has been notified in writing by the Board that the reporting requirement has been waived for this incident or category of incidents.
- The operator receives information notifying him of an adverse incident but that information is clearly erroneous.
- An adverse incident occurs to pests that are similar in kind to pests identified as potential targets.

A written report of a reportable adverse incident must be submitted to the Department within 5 days of discovering the adverse incident and must include the following information:

- Information required to be provided in Part I D 2 a;
- Date and time you contacted the Department notifying the agency of the adverse incident and who you spoke to and any instructions you were given;
- Location of incident, including the names of any waters affected and appearance of those waters (sheen, color, clarity, etc.);
- A description of the circumstances of the incident including species affected, number of individual and approximate size of dead or distressed organisms;
- Magnitude and scope of the affected area (e.g., aquatic square area or total stream distance affected);
- Pesticide application rate, intended use site (e.g., banks, above, or direct to water), method of application and name of pesticide product, description of pesticide ingredients and EPA registration number;
- Description of the habitat and the circumstances under which the incident occurred (including any available ambient water data for pesticides applied);
- If laboratory tests were performed, indicate what tests were performed, and when, and provide a summary of the test results within 5 days after they become available;
- If applicable, explain why it is believed the adverse incident could not have been caused by exposure to the pesticide;
- Actions to be taken to prevent recurrence of adverse incidents; and
- Signed and dated in accordance with Part II G.

The Department believes adverse incident information associated with discharges from the application of pesticides is useful to the Agency because the information:

- Indicates the effectiveness of the permit in controlling discharges to protect water quality, including data upon which the Department may base future permit decisions (e.g., modifications to or reissuance of this permit).
- Assists review of current or future pesticide use, adherence to, or effectiveness of Best Management Practices;
- Provides information on the nature, extent, and severity of incidents to decision-makers, stakeholders, and the public; and
- Provides the Agency with information on which to assess compliance with regulatory requirements, including documentation and reporting.

Immediately observable signs of distress or damage to non-target plants, animals and other macro-organisms within the treatment area may warrant concern for a possible adverse incident related to a discharge of pesticides during application. The Department acknowledges that some degree of detrimental impact to non-target species is to be expected and is acceptable during the course of normal pesticide treatment. We expect operators to use their best professional judgment in determining the extent

to which non-target effects appear to be abnormal or indicative of an unforeseen problem associated with an application of pesticides.

During visual monitoring, operators should watch for distressed or dead juvenile and small fishes, washed up or floating fish, fish swimming abnormally or erratically, fish lying lethargically at the water surface or in shallow water, fish that are listless or nonresponsive to disturbance, the stunting, wilting, or desiccation of non-target submerged or emergent aquatic plants, and other dead or visibly distressed non-target organisms including amphibians, turtles, and macro-invertebrates. These observations must be noted unless they are deemed not to be aberrant (for example, distressed non-target fish are to be expected when conducting a treatment with rotenone and non-target vegetation will be stressed near the target of contact herbicides). It should be noted that observation of these impacts does not necessarily imply that a pesticide has been misused or that there has been a permit violation or an instance of noncompliance, but may provide cause for further investigation of local water quality or reconsideration of Best Management Practices. Not reporting such incidents, however, is a permit violation.

Part I D 2 d specifies which agencies the operator must notify in the event of an adverse incident to federally or state threatened or endangered species, federally-designated critical habitat and Tier I (critical conservation need) and Tier II (very high conservation need) species of greatest conservation need. These species are defined in Virginia's Wildlife Action Plan (www.bewildvirginia.org). Federally-designated critical habitat in Virginia is the Clinch River, Copper Creek to Route 72, Indian Creek to just below the Mouth of Laurel and the Powell River to a point due east of Pennington Gap (see <http://crithab.fws.gov> for a national map of critical habitat and http://www.fws.gov/northeast/virginiafield/endspecies/Critical_Habitat.html for the Virginia map. A full listing of all aquatic and terrestrial species (except insects and plants) can be found at <http://www.dgif.virginia.gov/wildlife/virginiatescspecies.pdf> and can be found in Attachment B.

For location information, the wildlife information mapper can take you to any location in Virginia and if you click on 'report' it will list all species within a designated search radius (e.g., 2 or 3 miles) <http://vafwis.org/fwis/?Title=VaFWIS+Geographic+Search&vUT>. It will list the threatened and endangered species first.

Listing of state threatened or endangered plants and insects can be found in § 3.2-1000-1011 of the Code of Virginia and 2VAC5-320-10 of the Virginia Administrative Code and is in Attachment B.

In the event of an adverse incident to threatened and endangered species, federally-designated critical habitat, Tier 1 (critical conservation need), or Tier II (very high conservation need) areas you must tell the appropriate agency (National Marine Fisheries Service and Virginia Department of Game and inland Fisheries (DGIF) for anadromous or marine species and US Fish and Wildlife Service and DGIF for terrestrial or freshwater species) the following information (see Attachment C for contact information):

- The caller's name and telephone number;
- Operator name and mailing address;
- The name of the affected species, size of area impacted, and if applicable, the approximate number of animals affected;
- How and when the permittee became aware of the adverse incident;
- Description of the location of the adverse incident;
- Description of the adverse incident, including the EPA pesticide registration number for each product the permittee applied in the area of the adverse incident;
- Description of any steps the permittee has taken or will take to alleviate the adverse impact to the species; and
- Date and time of application.

Part I D 3 Reportable Spills and Leaks

Operators are required to call the Department (contact information in Part I D 5) to report any spill or leak of a hazardous substance or oil into surface waters with 24 hours of becoming aware of the spill or leak.² This must be documented with a report within 5 days of becoming aware of such spill or leak. The report shall contain the following information:

- A description of the nature and location of the spill, leak or discharge;
- The cause of the spill, leak or discharge;
- The date on which the spill, leak or discharge occurred;
- The length of time that the spill, leak or discharge continued;
- The volume of the spill, leak or discharge;
- If the discharge is continuing, how long it is expected to continue, and what the expected total volume of the discharge will be;
- A summary of corrective action taken or to be taken including date initiated and date completed or expected to be completed, and
- Any steps planned or taken to prevent recurrence of such a spill or leak or other discharge, including notice of whether PDMP modifications are required as a result of the spill or leak.

This information will be used by the Department to ascertain compliance with permit conditions.

The Board may waive the written report on a case-by-case basis for reports of noncompliance of the oral report has been received within 24 hours and no adverse impact on state water has been reported

Part I D 4 Recordkeeping and annual reporting

Operators must maintain certain records to help them assess performance of pest management measures and to document compliance with permit conditions. Operators can rely on records and documents developed for other programs, such as requirements under FIFRA, provided all requirements of the permit are satisfied.

All operators must keep copies of any adverse incident 5-day reports submitted to the Department or a rational for any determination that reporting of an identified adverse incident is not required per Part I D 2 a.

Any operators applying pesticides and exceeding the annual application thresholds in 9VAC25-800-30 C (e.g., 6,400 acres, 20 linear miles, etc.) must also maintain a record of each pesticide applied. This applies to both general use and restricted use pesticides. These record requirements mirror VDACS recordkeeping requirements in 2VAC20-40-65. The Department thinks the recordkeeping requirements for the agency mandated to administer the pesticide program in Virginia (i.e., VDACS) is sufficient information for the Department. These records are as follows:

- Name, address, and telephone number of customer and address or location, if different, of site of application (e.g. the customer may be the county, naval base, homeowner association, etc... It does not usually mean individual private properties within the larger entity);
- Name and VDACS certification number of the person making the application or certification number of the supervising certified applicator;
- Day, month and year of application;
- Type of plants, crop, animals, or sites treated and principal pests to be controlled;
- Acreage, area, or number of plants or animals treated;
- Brand name or common product name;
- EPA registration number;
- Amount of pesticide concentrate and amount of diluting used, by weight or volume, in mixture applied; and
- Type of application equipment used.

² Reportable Spills and Leaks are defined as those that trigger the requirement to notify the National Response Center (40 CFR Parts 110, 117, 302) based on the type of pollutant and quantity released.

All required records must be assembled as soon as possible but no later than 30 days following completion of such activity. The operator shall retain any records required under this permit for at least 3 years from the date of the pesticide application. This is consistent with 9VAC25-31-190 J 2 of the permit regulation. The operator shall make available to the Board, including an authorized representative of the Board, all records kept under this permit upon request and provide copies of such records, upon request. This is consistent with 9VAC25-31-190 H.

In addition to recordkeeping, all operators must submit annual reports of any adverse incidents as described in Part I D 2 no later than February 10 of the following year. The operator must also retain a copy for 3 years. The Department believes that the annual report of adverse incidents, along with the VDACS list of licensed pesticide businesses and certified operators, and the availability of records containing location, pest and product information with the operator, is equal to the annual reporting requirements in the federal EPA NPDES permit.

The annual report must contain the following:

- Operator's name;
- Contact person name, title, e-mail address (where available), and phone number;
- A summary report of all adverse incidents that occurred during the previous calendar year; and
- A summary of any corrective actions, including spill responses, in response to adverse incidents, and the rationale for such actions.

This information in the annual report will be used by the Department to assess permit compliance and to determine whether additional controls on pesticide discharges are necessary to protect water quality.

Part I D 5 DEQ contact information and mailing addresses

This section contains all the DEQ contact information for 24-hour reporting for adverse incidents and spills and leaks.

Part II Conditions applicable to all permits

VPDES Permit Regulation, 9VAC25-31-190, requires all VPDES permits to contain or specifically cite the conditions that are listed in this section. Some of the conditions in section 190 of the VPDES Permit Regulation have been eliminated because either there was no application to pesticide discharges or the requirement was already in Part I. For example, in monitoring Part II B we removed references to records related to sewage sludge, removed 'notice of planned changes', 'bypass' and 'upset' conditions as these relate only to treatment works. Also, removed 'reports of unauthorized discharges' and 'reports of unusual or extraordinary discharges' as these requirements exist elsewhere in the permit.

ATTACHMENT A
Pesticide Impaired Waters

James River (City of Richmond) **Chlordane***, **DDE***, **DDT***

James River from the Boulevard Bridge to the fall line at approximately the railroad trestle above Mayos Bridge.

Mechumps Creek Unnamed Tributary (Ashland - Hanover County) **Chlorpyrifos**, **Demeton**, **Guthion**, **Malathion**

Below Truckstops of America BP (37 45 37N 77 27 42W)

Harwood Mills Reservoir (York County) **Copper**

Segment begins at northwest end of reservoir and ends at southeast end of reservoir, Rt 17 crossing.

Lee Hall Reservoir, East and West Segments (York County, Newport News) **Copper**

This includes the entirety of Lee Hall Reservoir. Located southeast of Lee Hall area. Northeast of Fort Eustis. Lee Hall is split by I-64.

Bailey Creek (Hopewell City, Prince George County) **Aldrin***

Segment begins at the headwaters of Bailey Creek and extends downstream to the fall line.

Bailey Branch (Surry County) **Mirex***

Bailey Branch from the headwaters to its tidal limit.

Occupacia Creek and tributaries (Essex County) **Mirex***

Occupacia Creek from the headwaters to Hunters Millpond dam, and all tributaries entering above the tidal limit.

Lovills Creek Lake (Carroll County) **DDD***, **DDE*** and **DDT***

The Lovills Creek flood control impoundment east of Cana.

Lovills Creek (Carroll County) **DDE*** and **DDT***

Lovills Creek mainstem from the North Carolina state line upstream to just above the Route 686 crossing.

Difficult Run (Fairfax County) **Hepatachlor Epoxide***

Begins at the confluence with Captain Hickory Run, approximately 0.6 rivermile upstream from Route 683, and continues downstream until the confluence with the Potomac River.

Fourmile Run (Arlington County) **Chlordane***

Tidal waters of Fourmile Run; from rivermile 1.46 downstream until the confluence with the Potomac River, at the state line.

Pimmit Run (Arlington and Fairfax Counties) **Chlordane***

Location begins at the confluence with Little Pimmit Run, approximately 0.1 rivermile downstream from Route 695, and continues downstream until the confluence with the Potomac River

Pimmit Run (Arlington and Fairfax Counties) **Heptachlor Epoxide***

Location begins at the confluence with Little Pimmit Run, approximately 0.1 rivermile downstream from Route 695, and continues downstream until the confluence with the Potomac River.

New River (Giles County) **DDE***, **DDT***, **Heptachlor Epoxide***

Mainstem New River from the confluence of Sinking Creek and continues downstream to the mouth of Stony Creek.

Bluestone River (Tazewell County) **Chlordane***

This segment includes the mainstem from the confluence with Big Branch downstream to West Virginia political boundary; may be found on the Bramwell quad sheet.

*** Legacy pesticides or used in pesticides that are currently banned in the United States. You may apply other allowable pesticides in these waters.**

List Derived From:

http://www.deq.virginia.gov/Portals/0/DEQ/Water/WaterQualityAssessments/IntegratedReport/2012/ir12_Appendix5_Category5_Factsheets.pdf

and

http://www.deq.virginia.gov/Portals/0/DEQ/Water/WaterQualityAssessments/IntegratedReport/2012/ir12_Appendix2_Category_4B5E_Waters_List.pdf

ATTACHMENT B

Threatened and Endangered Fauna

<p>FRESHWATER FISHES</p> <p>Blackbanded sunfish <i>Enneacanthus chaetodon</i> SE</p> <p>Blackside dace <i>Phoxinus cumberlandensis</i> FT ST</p> <p>Carolina darter <i>Etheostoma collis</i> ST</p> <p>Duskytail darter <i>Etheostoma percnurum</i> FE SE</p> <p>Emerald shiner <i>Notropis atherinoides</i> ST</p> <p>Golden darter <i>Etheostoma denoncourti</i> ST</p> <p>Greenfin darter <i>Etheostoma chlorobranchium</i> ST</p> <p>Longhead darter <i>Percina macrocephala</i> ST</p> <p>Orangefin madtom <i>Noturus gilberti</i> ST</p> <p>Paddlefish <i>Polyodon spathula</i> ST</p> <p>Roanoke logperch <i>Percina rex</i> FE SE</p> <p>Sharphead darter <i>Etheostoma acuticeps</i> SE</p> <p>Shortnose sturgeon <i>Acipenser brevirostrum</i> FE SE</p> <p>Slender chub <i>Erimystax cahni</i> FT ST</p> <p>Spotfin chub <i>Erimonax monachus</i> FT ST</p> <p>Steelcolor shiner <i>Cyprinella whipplei</i> ST</p> <p>Tennessee dace <i>Phoxinus tennesseensis</i> SE</p> <p>Variegate darter <i>Etheostoma variatum</i> SE</p> <p>Western sand darter <i>Ammocrypta clara</i> ST</p> <p>Whitemouth shiner <i>Notropis alborus</i> ST</p> <p>Yellowfin madtom <i>Noturus flavipinnis</i> FT ST</p> <p>AMPHIBIANS</p> <p><i>Frogs</i></p> <p>Barking treefrog <i>Hyla gratiosa</i> ST</p> <p><i>Salamanders</i></p> <p>Eastern tiger salamander <i>Ambystoma tigrinum tigrinum</i> SE</p> <p>Mabee's salamander <i>Ambystoma mabeei</i> ST</p> <p>Shenandoah salamander <i>Plethodon shenandoah</i> FE SE</p> <p>REPTILES</p> <p><i>Lizards</i></p> <p>Eastern glass lizard <i>Ophisaurus ventralis</i> ST</p> <p><i>Snakes</i></p> <p>Canebrake rattlesnake <i>Crotalus horridus</i> SE</p> <p>(Coastal Plain population of timber rattlesnake)</p> <p><i>Turtles</i></p> <p>Bog (= Muhlenberg) turtle <i>Glyptemys</i> (=Clemmys) <i>muhlenbergii</i> FT SE</p> <p>Eastern chicken turtle <i>Deirochelys reticularia reticularia</i> SE</p> <p>Green sea turtle <i>Chelonia mydas</i> FT ST</p> <p>Hawksbill sea turtle <i>Eretmochelys imbricata</i> FE SE</p> <p>Kemp's ridley sea turtle <i>Lepidochelys kempii</i> FE SE</p> <p>Leatherback sea turtle <i>Dermochelys coriacea</i> FE SE</p> <p>Loggerhead sea turtle <i>Caretta caretta</i> FT ST</p> <p>Wood turtle <i>Glyptemys insculpta</i> ST</p>	<p>BIRDS</p> <p>Bachman's sparrow <i>Aimophila aestivalis</i> ST</p> <p>Bachman's warbler (=wood) <i>Vermivora bachmanii</i> FE SE</p> <p>Bald eagle <i>Haliaeetus leucocephalus</i> ST</p> <p>Bewick's wren <i>Thryomanes bewickii</i> SE</p> <p>Gull-billed tern <i>Sterna nilotica</i> ST</p> <p>Henslow's sparrow <i>Ammodramus henslowii</i> ST</p> <p>Kirtland's warbler (=wood) <i>Dendroica kirtlandii</i> FE SE</p> <p>Loggerhead shrike <i>Lanius ludovicianus</i> ST</p> <p>Peregrine falcon <i>Falco peregrinus</i> ST</p> <p>Piping plover <i>Charadrius melodus</i> FT ST</p> <p>Red-cockaded woodpecker <i>Picoides borealis</i> FE SE</p> <p>Roseate tern <i>Sterna dougallii dougallii</i> FE SE</p> <p>Upland sandpiper <i>Bartramia longicauda</i> ST</p> <p>Wilson's plover <i>Charadrius wilsonia</i> SE</p> <p>MAMMALS</p> <p>American water shrew <i>Sorex palustris</i> SE</p> <p>Carolina northern flying squirrel <i>Glaucomys sabrinus coloratus</i> FE SE</p> <p>Delmarva Peninsula fox squirrel <i>Sciurus niger cinereus</i> FE SE</p> <p>Dismal Swamp southeastern shrew <i>Sorex longirostris fisheri</i> ST</p> <p>Eastern puma (=cougar) <i>Puma</i> (=Felis) <i>concolor cougar</i> FE SE</p> <p>Gray bat <i>Myotis grisescens</i> FE SE</p> <p>Gray wolf <i>Canis lupus</i> FE SE</p> <p>Indiana bat <i>Myotis sodalis</i> FE SE</p> <p>Rafinesque's eastern big-eared bat <i>Corynorhinus rafinesquii macrotis</i> SE</p> <p>Rock vole <i>Microtus chrotorrhinus</i> SE</p> <p>Snowshoe hare <i>Lepus americanus</i> SE</p> <p>Virginia big-eared bat <i>Corynorhinus</i> (= <i>Plecotus</i>) <i>townsendii virginianus</i> FE SE</p> <p>Virginia northern flying squirrel <i>Glaucomys sabrinus fuscus</i> SE</p> <p>MARINE MAMMALS</p> <p>Blue whale <i>Balaenoptera musculus</i> FE SE</p> <p>Finback whale <i>Balaenoptera physalus</i> FE SE</p> <p>Humpback whale <i>Megaptera novaeangliae</i> FE SE</p> <p>Right whale <i>Balaena glacialis</i> (incl. <i>australis</i>) FE SE</p> <p>Sei whale <i>Balaenoptera borealis</i> FE SE</p> <p>Sperm whale <i>Physeter catodon</i> (= <i>macrocephalus</i>) FE SE</p> <p>West Indian manatee <i>Trichechus manatus</i> FE SE</p>
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MOLLUSKS

Freshwater Mollusks

Appalachian monkeyface (pearlymussel) *Quadrula sparsa* FE SE
 Atlantic pigtoe *Fusconaia masoni* ST
 Birdwing pearlymussel *Conradilla caelata* (= *Lemiox rimosus*) FE SE
 Black sandshell *Ligumia recta* ST
 Brook floater *Alasmidonta varicosa* SE
 Cracking pearlymussel *Hemistena lata* FE SE
 Cumberland bean (pearlymussel) *Villosa trabalis* FE SE
 Cumberland monkeyface (pearlymussel) *Quadrula intermedia* FE SE
 Cumberlandian combshell *Epioblasma brevidens* FE SE
 Deertoe *Truncilla truncata* SE
 Common Name Scientific Name Federal State
 Dromedary pearlymussel *Dromus dromas* FE SE
 Dwarf wedgemussel *Alasmidonta heterodon* FE SE
 Elephantear *Elliptio crassidens* SE
 Fanshell *Cyprogenia stegaria* FE SE
 Fine-rayed pigtoe *Fusconaia cuneolus* FE SE
 Fluted kidneyshell *Ptychobranhus subtentum* (Federal Candidate)
 Fragile papershell *Leptodea fragilis* ST
 Green blossom (pearlymussel) *Epioblasma torulosa gubernaculum* FE SE
 Green floater *Lasmigona subviridis* ST
 James spiny mussel *Pleurobema collina* FE SE
 Little-wing pearlymussel *Pegias fabula* FE SE
 Ohio pigtoe *Pleurobema cordatum* SE
 Oyster mussel *Epioblasma capsaeformis* FE SE
 Pimpleback *Quadrula pustulosa pustulosa* ST
 Pink mucket (pearlymussel) *Lampsilis abrupta* FE SE
 Pistolgrip *Tritogonia verrucosa* ST
 Purple bean *Villosa perpurpurea* FE SE
 Purple lilliput *Toxolasma lividus* SE
 Pyramid pigtoe *Pleurobema rubrum* SE

Rayed bean *Villosa fabalis* (Federal Candidate)
 Rough pigtoe *Pleurobema plenum* FE SE
 Rough rabbitsfoot *Quadrula cylindrica strigillata* FE SE
 Sheepnose *Plethobasus cyphus* ST
 Shiny pigtoe *Fusconaia cor* FE SE
 Slabside pearlymussel *Lexingtonia dolabelloides* ST
 Slippershell mussel *Alasmidonta viridis* SE
 Snuffbox *Epioblasma triquetra* SE
 Spectaclecase *Cumberlandia monodonta* SE
 Tan ruffleshell *Epioblasma florentina walkeri* (= *E. walkeri*) FE SE
 Tennessee heelsplitter *Lasmigona holstonia* SE
Freshwater & Land Snails
 Appalachian springsnail *Fontigens bottimeri* SE
 Brown supercoil *Paravitrea septadens* ST
 Rubble coil *Helicodiscus lirellus* SE
 Shaggy coil *Helicodiscus diadema* SE
 Spider elimia *Elimia arachnoidea* SE
 Spiny riversnail *Io fluvialis* ST
 Spirit supercoil *Paravitrea hera* SE
 Springsnail (no common name) *Fontigens morrisoni* SE
 Thankless ghostsnail *Holsingeria unthinksensis* SE
 Virginia fringed mountain snail *Polygriscus virginianus* FE SE

FRESHWATER CRUSTACEANS

Big Sandy crayfish *Cambarus veteranus* SE
 Lee County Cave isopod *Lirceus usdagalun* FE SE
 Madison Cave amphipod *Stygobromus stegerorum* ST
 Madison Cave isopod *Antrolana lira* FT ST

MILLIPEDES

Ellett Valley pseudotremia *Pseudotremia cavernarum* ST
 Laurel Creek xystodesmid *Sigmoria whiteheadi* ST

For further information or details regarding this list or any species listed herein, please contact:

Wildlife Diversity Division
 Virginia Department of Game and Inland Fisheries
 (804) 367-6913

FE=Federal Endangered
 FT=Federal Threatened
 SE=State Endangered
 ST=State Threatened

ATTACHMENT B, continued...
Threatened and Endangered Plants and Insects

Threatened per § 3.2-1000-1011 Code of Virginia

Panax quinquefolius L , Wild Ginseng (threatened only when occurring in the wild)

Threatened per 2VAC5-320-10 Virginia Administrative Code

1. *Aeschynomene virginica*, sensitive-joint vetch.
2. *Amaranthus pumilus*, seabeach amaranth.
3. *Arabis serotina*, shale barren rock cress.
4. *Cicindela dorsalis dorsalis*, Northeastern beach tiger beetle.
5. *Echinacea laevigata*, smooth coneflower.
6. *Juncus caesariensis*, New Jersey rush.
7. *Lycopodiella margueritiae*, Northern prostrate clubmoss.
8. *Nuphar sagittifolia*, narrow-leaved spatterdock.
9. *Platanthera leucophaea*, Eastern prairie fringed orchid.
10. *Pyrgus wyandot*, Appalachian grizzled skipper.
11. *Rhus michauxii*, Michaux's sumac.
12. *Scirpus flaccidifolius*, reclining bulrush.

Endangered per § 3.2-1000-1011 Code of Virginia

Betula uber, Virginia birch or round-leaf birch

Endangered per 2VAC5-320-10 Virginia Administrative Code

1. *Cardamine micranthera*, small-anthered bittercress.
2. *Carex juniperorum*, juniper sedge.
3. *Corallorhiza bentleyi*, Bentley's coralroot.
4. *Fimbristylis perpusilla*, Harper's fimbriatylis.
5. *Helenium virginicum*, Virginia sneezeweed.
6. *Helonias bullata*, swamp-pink.
7. *Ilex collina*, long-stalked holly.
8. *Iliamna corei*, Peter's mountain mallow.
9. *Isotria medeoloides*, small whorled pogonia.
10. *Neonympha mitchellii*, Mitchell's satyr butterfly.
11. *Nestronia umbellula*, nestronia.
12. *Ptilimnium nodosum*, harperella.
13. *Puto kosztarabi*, Buffalo Mountain mealybug.
14. *Pseudanophthalmus holsingeri*, Holsinger's cave beetle.
15. *Scirpus ancistrochaetus*, Northeastern bulrush.
16. *Sigara depressa*, Virginia Piedmont water boatman.
17. *Spiraea virginiana*, Virginia spiraea.
18. *Trifolium calcaricum*, running glade clover.

Federally Endangered

1. *Nicrophorus americanus*, American burying beetle

ATTACHMENT C
CONTACT INFORMATION FOR THREATENED AND ENDANGERED SPECIES
ADVERSE INCIDENT REPORTING

FOR THREATENED OR ENDANGERED ANADROMOUS OR MARINE SPECIES CONTACTS:

Department of Game and Inland Fisheries at (804) 367-6913

AND

National Marine Fisheries Service at NOAA OLE national hotline at 1-800-853-1964.

FOR THREATENED OR ENDANGERED ANIMAL OR INVERTEBRATE SPECIES CONTACTS:

Department of Game and Inland Fisheries at collectionpermits@dgif.virginia.gov and/or (804) 367-6913 (email notification is preferred for record keeping purposes)

AND

U.S. Fish and Wildlife Service Virginia Law Enforcement Office at 804-771-2883, 5721 South Laburnum Avenue, Richmond, Virginia 23231 and the Virginia Field Office at 804-693-6694, Virginia Field Office, 6669 Short Lane, Gloucester, Virginia 23061

FOR THREATENED OR ENDANGERED PLANTS OR INSECTS CONTACTS:

Virginia Department of Agriculture and Consumer Services

Mr. Keith Tignor

804.786.3515

E-mail: Keith.Tignor@vdacs.virginia.gov

U.S. Fish and Wildlife Service Virginia Law Enforcement Office at 804-771-2883, 5721 South Laburnum Avenue, Richmond, Virginia 23231 and the Virginia Field Office at 804-693-6694, Virginia Field Office, 6669 Short Lane, Gloucester, Virginia 23061

ATTACHMENT D

INTEGRATED PEST MANAGEMENT REFERENCES

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Aquatic Animal Pest Control

Aquatic Nuisance Species Taskforce. Online: <http://www.anstaskforce.gov/default.php>.

Forest Canopy Pest Control

Emily Grafton and Ralph Webb. Homeowner's guide to gypsy moth management. West Virginia University Extension Service. <http://www.wv.gov/agriculture/divisions/pi/pdf/GMguide.pdf>

Intrusive Vegetation Pest Control

http://www.epa.gov/pesticides/grants/eei_integrated_mgmt.htm

http://www.pesticides.montana.edu/BLM/blm_row.pdf

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